Rural Health Care Support Mechanism, WC Docket No. 02-60
Geisinger Health System
100. N. Acadmey Avenue
Danville, PA 17822

1. **Identify the organization that will be legally and financially responsible for the conduct of activities supported by the fund.**

Geisinger Health System ("Geisinger") and its physician practice plan, Geisinger Clinic, will be the legal entity responsible for this project. Geisinger is located in central and northeastern Pennsylvania servicing a population of more than 2.6 million people in 41 of the Commonwealth of Pennsylvania's 67 counties (see map – Appendix A). Geisinger's physicians see patients in more than 50 clinics and hospitals; our community practice site locations number 38. Our service area covers a total of 20,000 square miles; 19 counties we serve are officially designated "rural". This makes service to rural locations difficult as many vendors do not provide service to our region. Geisinger's community practice physicans admit patients to small community hospitals. Geisinger has three hospitals – Geisinger Medical Center, a tertiary, quaternary hospital located in Danville, PA; Geisinger Wyoming Valley Medical Center and Geisinger South Wilkes-Barre (both located in Wilkes-Barre, PA). Geisinger also has an alcohol and drug treatment center (Marworth) located in Waverly, PA. Finally, our facilities include three outpatient surgical centers. An institutional letter of support is included in Appendix B

Geisinger's caregivers see more than 1.5 million outpatients each year; more than 32,000 patients are discharged from its hospitals' inpatient units. Geisinger Clinic employs more than 650 physicians; approximately 200 of these are primary care physicians. Geisinger has four LifeFlight® helicopter air ambulances located in Danville, State College, Williamsport, Wilkes-Barre/Scranton and Minersville. Geisinger Medical Center is a Level I trauma center with specialized accreditation in pediatrics.

Research facilities include basic science research, housed in the Janet Weis Research Center and outcomes/epidemiology/environmental research located in the Geisinger Center for Health Research, founded in 2003. Clinicians also participate in research and clinical trials; a Center for Clinical Studies was founded this year to help coordinate clinical studies and increase Geisinger participation in trials. More than $6 million is received annually in funding. *Geisinger's research infrastructure is sufficient to handle all financial and reporting responsibilities for the funding of this FCC pilot study.*

A national leader in the use of a fully integrated EHR, Geisinger has invested nearly $80 million in hardware, software, manpower, and training since 1995. Annual running costs supporting information technology is approximately 4.2% of the system's annual revenue of approximately $1.7 billion. More than 3 million patient records are part of the electronic health record (EHR); nearly 80,000 patients are active users of MyGeisinger, the patient portal to their EHR. In non-proprietary fashion, Geisinger provides a portal for non-Geisinger referring practices (GeisingerConnect), with over 700 non-Geisinger practice users accessing shared patient information (with appropriate patient approval).

See IT map Appendix C. Geisinger authors published the book: *Implementing an Electronic Health Record System,* Walker J, Bieber E, Richards F, eds, Springer, Health Informatics Series, 2005.

Awards and honors:

- Geisinger named "Most Wired" in 1992, 2002, 2004, and 2006, an award given by the *Healthcare's Most Wired* magazine.
- Geisinger's President and CEO, Glenn Steele Jr, MD, PhD, was named CEO Health Information Technology Leader award recipient in 2006 – the first sole recipient of this prestigious annual award given by the Health Information Management Systems Society and *Modern Healthcare* magazine.
- In June of this year, Geisinger will receive a medal at an awards ceremony in Washington in recognition of the use of health information technology (case study: Clinical Decision Intelligence System (CDIS)) as an Honors Program Laureate by ComputerWorld (IBM-nominated case study).

Of note, Geisinger is a leader in the formation of the Central PA Health Informatics Consortium (CPHIC), our central PA regional health information organization (RHIO). As such, we are the recipient of an award from AHRQ for the development of the RHIO. Our system is also a member of PA's Northeastern RHIO, a newer RHIO that is patterning itself after the CPHIC organization. The goal is to mirror the functionalities of each of these two RHIOs and merge into one larger RHIO over the next few years. This collaborative project provides us a unique opportunity to plan for expanding broadband width to smaller, rural hospitals and clinics.

2. Identify the goals and objectives of the proposed network.

Goals and Objectives:

- Goal: Sufficient bandwidth to allow pre-transport assessment of CT radiographs for trauma patients.
- Objective: Geisinger Medical Center, a Level I trauma center, treats approximately 1,400 trauma patients each year. These patients are frequently referred from other regional hospitals that have already performed CT scans. Pre-assessment of these scans prior to transport could expedite or modify diagnosis and management significantly. A broadband-funded network would allow other specialties that cannot afford connectivity to implement similar programs, allowing rapid transfer of diagnostic data for trauma patients from referring ERs and medical/surgical services. This would likely result in reductions in morbidity, mortality, costs, and duplication of testing.

- Goal: Improve remote electronic healthcare record (EHR) access and ancillary functions.
- Objective: Geisinger's EHR currently has over 3 million unique patient records. Over 700 non-Geisinger physician practices already access the records of patients of whom we share care (with appropriate patient approval). More than 80,000

patients access their own medical record via the Internet through an HIPAA-compliant portal, MyGeisinger. With extension of a broadband network to other regional hospitals and physician practices, we could make available not only records of patients shared by regional caregivers, but also provide on-line education and access to links to reputable prevention and treatment knowledge bases.

  - Goal: Expand deployment of pediatric tele-echo services.
  - Objective: Importantly, having the ability to electronically send high quality radiology images that can be distantly interpreted by Geisinger specialists would benefit rural areas unable to recruit (or support) healthcare specialists. The Center for Pediatric and Congenital Heart Disease currently has over 20 hospitals utilizing our tele-echo network (Attachment D). An additional three large community practice sites in the Guthrie Health Care System in New York State is in the process of transitioning to our service. Specialists at Geisinger receive real-time pediatric cardiac echocardiograms from those remote sites and provide specialty interpretation and consultation. This service allows pediatric patients to remain locally (to the extent possible) and to be transferred to the closest appropriate tertiary care center, as needed. Internet2 would allow further expansion of these services to rural areas. Future sites' Rural Urban Commuting Areas (RUCA) designations would be provided following the work plan's identification of interested partners (Quarter 1).

- Goal: Improve performance of poor performing or non-existent digital connections (e.g., ISDN, SDL)
- Objective: Create redundant network connections for robust reliability and better overall performance. Because Geisinger has an EHR, our 50+ practice clinics throughout central and northeastern Pennsylvania are extremely dependent on data communications connectivity to our data center where the EHR is hosted. For a number of reasons, telecommunication lines are not as reliable in rural areas as in metro areas. Most lines are run on poles along secondary roads, leaving them vulnerable to vehicle accidents. Rural telecommunications are generally more susceptible to lightning and other storm-related damage. During the summer months we usually experience about one line outage per week. These outages sometines closing our clinics until power is resumed since our physicians require access to the EHR to provide adequare care. ISDN lines were installed to back-up the T1s (the only option at that time). A major drawback to ISDN back up is that it is generally provided by the same carrier, on the same poles, and in the same cables as the T1. Therefore, many of the failures that will cause the primary T1 to go down will also take out the ISDN back-up connection. Over the past few years as bandwidth needs increased, the value of ISDN lines, limited to 128Kbps, as a backup have further decreased. A beneficial side effect of this project is that, in addition to improving healthcare in rural areas, installation of service for Geisinger will also make wireless Internet service available to the public and other businesses in these rural areas.

3. **Estimate the network's total costs for each year.**

Totals*		FCC Portion @ 85%
Year 1:	$ 527,288	$448,195
Year 2:	$ 533,360	$453,356
Total	**$1,060,649**	**$901,551**

*Estimates only. Budget detail, Appendix E

4. **Describe how for-profit network participants will pay their fair share of the network costs.**

As a non-profit organization, Geisinger and its non-profit partners will contribute 15% of costs. For-profit physician groups will be expected to contribute a reasonable amount to that percent, but to-be-determined share, based on size, profitability, etc. For-profit companies serving as subcontractors will be expected to bid competitively and demonstrate commitment and also contribute 15% of their total contract costs. This may include, for example, telephone consultations and participation in local and regional meetings.

5. **Identify the source of financial support and anticipated revenues that will pay for costs not covered by the fund.**

Geisinger is committed to extending the benefits of tele-medicine throughout northeastern and central Pennsylvania. A reflection of this commitment was the development of GeisingerConnect, which allows referring physicians access to their patients' medical information and MyGeisinger for patient access. These initiatives were supported by a combination of Geisinger funds and funds from foundation, federal, and state grants. Geisinger will leverage the FCC funding by a combination of internal funding, especially from departments participating in this endeavor (particularly Radiology and Pediatric Cardiology) and seek external state and national grants to offset costs. Finally, our advocacy arm will speak to state and national leaders to address policy changes that could make ongoing support reasonable.

6. **List the healthcare facilities that will be included in the network.**

   See Appendix D for facilities currently participating in the pediatric echocardiogram distant reading program. Using these as a successful program of telemedicine, we plan to expand out to additional rural hospitals. In addition, the rural counties of central and northeaster Pennsylvania formed the PA Rural Stroke Initiatve. Fifty-three hospitals in our rural area joined in this effort to educate the region on strokes and provide best practice guidelines: http://www.ruralstroke.org. We can also tap into this list to look for further networking opportunities pending funding.

7. **Provide the address, zip code and Rural Urban Commuting Areas (RUCA) code and phone number for each healthcare facility participating in the network.**

   See Appendix D. These facilities currently participate in the pediatric echocardiogram

distant reading program. Other healthcare facilities will be approached pending funding.

8. **Indicate previous experience in developing and managing telemedicine programs.**

Geisinger's Center for Pediatric and Congenital Heart Disease currently has over 20 hospitals that feed our Tele-echo network, and an additional three large community practice sites in the Guthrie Health Care system in NY that are in the process of transitioning to our service.

With funding from the Agency for Healthcare Research and Quality (a planning grant and approved implementation grant), Geisinger and two local community hospitals (Shamokin Hospital and Bloomsburg Hospital), have developed a Master Patient Index that allows patient data to be shared between Emergency Departments.

Of note, Geisinger is a leader in the formation of the Central PA Health Informatics Consortium (CPHIC), our regional health information organization (RHIO); as such we are the recipient of an award from AHRQ for the development of the RHIO. Our system is also a member of PA's Northeastern RHIO, a newer RHIO that is patterning itself after the design of CPHIC. The goal is to mirror the functionalities of each of these two RHIOs and merge into one over the next few years. This collaborative project provides us a unique opportunity to plan for expanding broadband width to smaller, rural hospitals and clinics.

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9. **Provide a project management plan outlining the project's leadership and management structure, as well as its work plan, schedule, and budget**

The project will be co-managed by three Geisinger departments. First, Bruce H. Hamory, MD (Executive Vice President, Chief Medical Officer) is responsible for Geisinger Clinic – the physician practice group (organizational chart, Appendix F). Frank Richards (Chief Information Officer) is responsible for information technology projects. Both Dr. Hamory and Mr. Richards will likely have subordinates for day-to-day operations and project management. In Radiology, Dominic Conca, MD (Chairman, Radiology and Medical Director, Radiology Service Line) and Mike Leighow (Associate Vice President, Radiology) will lead the radiology efforts. In Pediatric Cardiology, Fred Emge, MD will lead the echocardiology program. Anthony Udeku, MD (Trauma Surgery) and Tom Weir (Vice President, Anesthesiology and Surgery Services) will lead the trauma program. The management team will include participating hospitals/practices as partnership progresses. Responsibilities for team members will be clearly identified prior to funding. During the first quarter, support staff will be recruited and the timeline better defined (see Workplan and Schedule – Appendix G).

10. **Indicate how a telemedicine program will be coordinated throughout the state or region.**

Geisinger would plan to work with existing hospitals that are part of the Pediatric and Congenital Heart Disease program. Our trauma surgeons would reach out to hospitals that transfer trauma patients to Geisinger Medical Center and identify those in need of bandwidth to send remote images to our Emergency Department for assessment while the patient is in transport to a trauma center.

Our RHIO – both the CPHIC and the newer one in the northeast of the state – would be canvassed for their needs.

11. **Indicate to what extent the network can be self-sustaining once established**

As part of the workplan assessment and, with experience, our partnership will develop a cost structure for sustaining the network. This may be based on usage and scaled for size of the institutions and practices participating. Sustaining a network continues to be a topic that the RHIOs also are addressing. We will tap into the work that is being done by those groups. Likewise, our AHRQ grant requires a sustaining plan for the three hospitals sharing the Master Patient Index, a basis for our plans.

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